REMARKS

Claims 76-77 and 81-128 are pending. In this Response, applicants amend Claims 76-77 and 81-128. The claim amendments do not introduce any new matter.

Rejection of Claims under 35 U.S.C. §102(e) as Anticipated by Zhu

The Examiner rejects Claims 81-128 under 35 U.S.C. § 102(e) as anticipated by Zhu *et al.*, U.S. Patent Application Publication No. US2004/0106556 (hereinafter "Zhu"). Applicants respectfully assert that the claim amendments presented in this Response overcome the rejection.

Zhu

Zhu is a publication of U.S. Patent Application No. 10/650,110, filed August 26, 2003, which claims a priority date of August 26, 2002. The present application was filed March 8, 2004 and claims a priority date of July 3, 2003. All of the above applications are assigned to Lipid Sciences, Inc.

Previous Record

In the Amendment and Response to Office Action filed September 28, 2006, Applicants brought to the Examiner's attention that all of the relevant passages of Zhu cited by the Examiner have a priority date of August 26, 2003, that is later than the priority date of the present application. Applicants therefore asserted that, based on the priority date, these passages could not be used to support a rejection under 35 U.S.C. § 102(e).

In the Final Office Action mailed October 27, 2006, the Examiner responded to Applicants' arguments summarized above by not granting to the claimed embodiments of the invention the claim of benefit of Provisional Application Serial No. 60/484,690, filed July 3, 2003. The Examiner asserted that the effective priority date of then pending claims was March 8, 2004, which made Zhu available as a reference under 35 U.S.C. § 102(e) based on the priority date of August 26, 2003. The Examiner did not dispute the priority date of August 26, 2003,

with regard to the disclosure of Zhu that was used to support the rejection of the claims of the present application under 35 U.S.C. §102(e).

Claim Amendments

In this Response, Applicants amend the claims to recite compositions comprising a particle derivative of high density lipoprotein (HDL) particles. In one embodiment, recited in Claims 76-77 and 81-102, a composition is formed by exposing the biological fluid comprising high density and low density lipoprotein particles to a lipid removing agent, wherein the low density lipoprotein particles (LDL) are substantially unmodified by the exposure as compared to the LDL particles in the biological fluid prior to exposure to the lipid removing agent In another embodiment, recited in Claims 103-128, LDL particles are separated from the biological fluid prior to the exposure of the biological fluid to the lipid removing agent. Support for the amendments is found throughout the specification, for example, on page 8, lines 1-22; page 19, lines 12-24; page 20, lines 11-30; page 21, lines 13-29; page 22, lines 10-17; Example 3 on page 39, and Example 5 beginning on page 40. All of the above passages disclose biological fluid delipidation processes that reduce lipid content of HDL particles in the biological fluid, and result in the compositions recited in the currently amended claims.

Priority

Applicants assert that the currently amended claims are supported by the disclosure of the Provisional Application Serial No. 60/484,690, filed July 3, 2003. The disclosure of the Provisional Application Serial No. 60/484,690 provides support for the pending claims as shown in detail below. Applicants therefore assert that the currently amended claims have the benefit of priority of the Provisional Application Serial No. 60/484,690.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
76. A composition comprising substantially unmodified low density lipoprotein particles and a particle derivative of high density lipoprotein particles comprising lipids, apolipoprotein A-1 and at least one of apolipoprotein C-III, apolipoprotein D or apolipoprotein E, wherein the lipids include phospholipids, wherein the composition is formed by exposing a biological fluid comprising low density lipoprotein particles and high density lipoprotein particles to a lipid removing agent, wherein the substantially unmodified low density lipoprotein particles are substantially unmodified as compared to the low density lipoprotein particles in the biological fluid prior to exposure of the biological fluid to the lipid removing agent, and wherein the particle derivative of the high density lipoprotein particles has a lower content of at least one of the phospholipids or cholesterol than the high density lipoprotein particles in the biological fluid prior to exposure of the biological fluid to the lipid removing agent.	On p. 6, lines 30-32, and on p. 11, line 23, through p. 12, line 23, the specification contains disclosure of a process of selective delipidation of biological fluids, such as plasma, containing both HDL and LDL particles, recited in the claim. The selective delipidation process results in the claimed composition, wherein "only HDL is delipidated and LDL remains at least substantially intact" (p. 11, lines 32-33). One of ordinary skill in the art in the field of the invention would know that a particle derivative of HDL particle in a composition obtained by the disclosed delipidation process inherently retains similar composition and distribution of apolipoproteins to those found in the HDL particles found in the biological fluids. In particular, the particle derivative comprises apolipoprotein A-1 and at least one of apolipoprotein C-III, apolipoprotein D, or apolipoprotein E. The term "fluid" is defined on p. 7, line 25, through p. 8, line 4. The term "lipid" is defined as including phospholipids on p. 8, lines 18-24. On p. 16, line 25, through p. 17, line 8, the specification contains a working example of a selective delipidation process recited in the claim. On p. 16, in the bottom of Table 1, the last three rows of the data set denoted "14089" show that, in the selectively delipidated composition, LDL cholesterol content was substantially unmodified (last column), whereas HDL cholesterol content was lowered (third data column). Figure 2 is a schematic depiction of the selective delipidation process.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
77. A composition comprising substantially unmodified low density lipoprotein particles and a particle derivative of high density lipoprotein particles comprising lipids and apolipoprotein A-1, wherein the lipids include phospholipids and at least one of triglycerides or fatty acids, wherein the composition is formed by exposing a biological fluid comprising low density lipoprotein particles and high density lipoprotein particles to a lipid removing agent, wherein the substantially unmodified low density lipoprotein particles are substantially unmodified as compared to the low density lipoprotein particles in the biological fluid prior to exposure of the biological fluid to the lipid removing agent, and wherein the particle derivative of the high density lipoprotein particles has a lower content of at least one of the phospholipids or cholesterol than the high density lipoprotein particles in the biological fluid prior to exposure of the biological fluid to the lipid removing agent.	Same as discussed above for Claim 76. The term "lipid" is defined as including triglycerides or fatty acids on p. 8, lines 18-24.
81. The composition of Claim 76, wherein the lipids include at least one of triglycerides or fatty acids.	The term "lipid" is defined as including triglycerides or fatty acids on p. 8, lines 18-24.
82. The composition of Claim 77, wherein the particle derivative of the high density lipoprotein particles further comprises at least one of apolipoprotein C-III, apolipoprotein D or apolipoprotein E.	One of ordinary skill in the art in the field of the invention would know that a particle derivative of HDL particle in a composition obtained by the disclosed delipidation process inherently retains similar composition and distribution of apolipoproteins to those found in the HDL particles found in the biological fluids. In particular, the particle derivative comprises apolipoprotein A-1 and at least one of apolipoprotein C-III, apolipoprotein D, or apolipoprotein E.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
83. The composition of Claim 76, wherein the particle derivative of the high density lipoprotein particles has a lower content of cholesterol than the high density lipoprotein particles in the biological fluid prior to exposure of the biological fluid to the lipid removing agent.	On p. 16, in the bottom of Table 1, the last three rows of the data set denoted "14089" show that, in the selectively delipidated composition, HDL cholesterol content was lowered (Table 1, third data column denoted "HDL").
84. The composition of Claim 76, wherein the lipid removing agent is an ether or a combination of an alcohol and an ether.	Suitable lipid removing agents or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include ethers and hydrocarbons. (p. 8, line 32). In the working example beginning on p. 16, line 26, a combination of di-isopropyl ether and n-butanol is disclosed (p. 17, line 11).
85. The composition of Claim 84, wherein the ether is di-isopropyl ether.	Di-isopropyl ethers (DIPE) is disclosed as a suitable solvent on p. 8, line 33, on p. 9, line 1; on p. 17 in Table 1 (in particular, the last three rows), and in lines 7 and 10.
86. The composition of Claim 84, wherein the alcohol is n-butanol.	In the working example beginning on p. 16, line 26, a combination of di-isopropyl ether and n-butanol is disclosed (p. 17, line 11).
87. The composition of Claim 76, wherein the lipid removing agent is a mixture of sevoflurane and n-butanol.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and combinations of ethers and hydrocarbons. (p. 8, lines 32-33). Sevoflurane is an ether disclosed on p. 9, line 3.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
88. The composition of Claim 76, wherein the exposure is achieved by an exposure process comprising the steps of: a. mixing the lipid removing agent with the biological fluid comprising the high density lipoprotein particles and the low density lipoprotein particles, to create a mixture comprising the particle derivative, the substantially unmodified low density lipoprotein particles, removed lipids, and the lipid removing agent; b. separating the lipid removing agent and the removed lipids from the mixture; and, c. collecting the composition.	The exposure process is disclosed on p. 11, line 24, through p. 12, line 16; in the working example on p. 16, line 25, through p. 17, line 9; and in Figure 2.
89. The composition of Claim 88, wherein the lipid removing agent comprises a mixture of sevoflurane and n-butanol.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include combinations of ethers and hydrocarbons (p. 8, lines 32-33). Sevoflurane is an ether disclosed on p. 9, line 3.
90. The composition of Claim 88, wherein the mixing is performed using a static mixer.	Mixing performed by a static mixer is disclosed on p. 14, lines 22-23.
91. The composition of Claim 88, wherein the separation is performed using a charcoal column.	Separation step performed using a charcoal column is disclosed on p. 30, lines 29-32.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
92. The composition of the high density lipoprotein particles of Claim 76, wherein the biological fluid comprising low density lipoprotein particles and high density lipoprotein particles is obtained by a process comprising the steps of: d. connecting a patient to a device for withdrawing blood; e. withdrawing the blood containing blood cells from the patient; f. separating the blood cells from the blood to yield the biological fluid comprising the high density lipoprotein particles and the low density lipoprotein particles.	Separation of blood cells from plasma prior to delipidation is disclosed on p. 11, lines 25-30, and in Figure 2. Based on the disclosure, one of ordinary skill in the art of the present invention would understand that blood is withdrawn from the patient prior to separation.
93. The composition of Claim 77, wherein the particle derivative of the high density lipoprotein particles has a lower content of cholesterol than the high density lipoprotein particles in the biological fluid prior to exposure of the biological fluid to the lipid removing agent.	On p. 16, in the bottom of Table 1, the last three rows of the data set denoted "14089" show that, in the selectively delipidated composition, HDL cholesterol content was lowered (Table 1, third data column denoted "HDL").
94. The composition of Claim 77, wherein the lipid removing agent is an ether or a combination of an alcohol and an ether.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include ethers and hydrocarbons. (p. 8, line 32). In the working example beginning on p. 16, line 26, a combination of di-isopropyl ether and n-butanol is disclosed (p. 17, line 11).
95. The composition of Claim 94, wherein the ether is di-isopropyl ether.	Di-isopropyl ethers (DIPE) is disclosed as a suitable solvent on p. 8, line 33, on p. 9, line 1; on p. 17 in Table 1 (in particular, the last three rows), and in lines 7 and 10.
96. The composition of Claim 94, wherein the alcohol is n-butanol.	In the working example beginning on p. 16, line 26, a combination of di-isopropyl ether and n-butanol is disclosed (p. 17, line 11).

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
97. The composition of Claim 77, wherein the lipid removing agent is a mixture of sevoflurane and n-butanol.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include combinations of ethers and hydrocarbons (p. 8, lines 32-33). Sevoflurane is an ether disclosed on p. 9, line 3.
98. The composition of Claim 77, wherein the exposure is achieved by an exposure process comprising the steps of: a. mixing the lipid removing agent with the biological fluid comprising the high density lipoprotein particles and the low density lipoprotein particles, to create a mixture comprising the particle derivative, the substantially unmodified low density lipoprotein particles, removed lipids, and the lipid removing agent; b. separating the lipid removing agent and the removed lipids from the mixture; and, c. collecting the composition.	The exposure process is disclosed on p. 11, line 24, through p. 12, line 16; in the working example on p. 16, line 25, through p. 17, line 9; and in Figure 2.
99. The composition of Claim 98, wherein the lipid removing agent comprises a mixture of sevoflurane and n-butanol.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include combinations of ethers and hydrocarbons (p. 8, lines 32-33). Sevoflurane is an ether disclosed on p. 9, line 3.
100. The composition of Claim 98, wherein the mixing is performed using a static mixer.	Mixing performed by a static mixer is disclosed on p. 14, lines 22-23.
101. The composition of Claim 98, wherein the separation of the lipid removing agent and the removed lipids is performed using a charcoal column.	Separation step performed using a charcoal column is disclosed on p. 30, lines 29-32.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
102. The composition of Claim 77, wherein the biological fluid comprising low density biological particles and high density biological particles is obtained by an exposure process comprising the steps of: a. connecting a patient to a device for withdrawing blood; b. withdrawing the blood containing blood cells from the patient; c. separating the blood cells from the blood to yield a the biological fluid comprising the high density lipoprotein particles and the low density lipoprotein particles.	Separation of blood cells from plasma prior to delipidation is disclosed on p. 11, lines 25-30, and in Figure 2. Based on the disclosure, one of ordinary skill in the art of the present invention would understand that blood is withdrawn from the patient prior to separation.
103. A composition comprising a particle derivative of at least one form of high density lipoprotein particle comprising lipids, apolipoprotein A-1 and at least one of apolipoprotein C-III, apolipoprotein D or apolipoprotein E, wherein the lipids include phospholipids, wherein the composition is formed by separating low density lipoprotein particles from a biological fluid comprising high density lipoprotein particles and the low density lipoprotein particles and, subsequently to the separation, exposing the biological fluid to a lipid removing agent, and wherein the particle derivative has a lower content of at least one of the phospholipids or cholesterol than the high density lipoprotein particles in the biological fluid prior to exposure of the biological fluid to the lipid removing agent.	On p. 6, lines 23-28, and on p. 10, line 16, through p. 11, line 21, the specification contains disclosure of a process of delipidation of biological fluids, such as plasma, containing both HDL and LDL particles, wherein the LDL particles are separated from the biological fluid prior to treatment. The delipidation process results in the claimed composition. The process recited in the claim and is also schematically illustrated in Figure 1. One of ordinary skill in the art in the field of the invention would know that a particle derivative of HDL particle in a composition obtained by the disclosed delipidation process inherently retains similar composition and distribution of apolipoproteins to those found in the HDL particles found in the biological fluids. In particular, the particle derivative comprises apolipoprotein A-1 and at least one of apolipoprotein C-III, apolipoprotein D, or apolipoprotein E. The term "fluid" is defined on p. 7, line 25, through p. 8, line 4. The term "lipid" is defined as including phospholipids on p. 8, lines 18-24.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
104. The composition of Claim 103, wherein the particle derivative has a lower content of cholesterol than the high density lipoprotein particles in the biological fluid prior to exposure of the biological fluid to the lipid removing agent.	In an example disclosed in Table 1, exposure of HDL particles to a di-isopropyl ether, a lipid removing agent, leads to reduction in HDL cholesterol.
105. The composition of Claim 103, wherein the lipid removing agent is an ether or a combination of an alcohol and an ether.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include ethers and hydrocarbons. (p. 8, line 32). In the working example beginning on p. 16, line 26, a combination of di-isopropyl ether and n-butanol is disclosed (p. 17, line 11).
106. The composition of Claim 105, wherein the ether is di-isopropyl ether.	Di-isopropyl ethers (DIPE) is disclosed as a suitable solvent on p. 8, line 33, on p. 9, line 1; on p. 17 in Table 1 (in particular, the last three rows), and in lines 7 and 10.
107. The composition of Claim 105, wherein the alcohol is n-butanol.	In the working example beginning on p. 16, line 26, a combination of di-isopropyl ether and n-butanol is disclosed (p. 17, lines 11-13).
108. The composition of Claim 103, wherein the lipid removing agent is a mixture of sevoflurane and n-butanol.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include combinations of ethers and hydrocarbons (p. 8, lines 32-33). Sevoflurane is an ether disclosed on p. 9, line 3.
109. The composition of Claim 103, wherein the exposure is achieved by an exposure process comprising the steps of: a. mixing the lipid removing agent with the biological fluid comprising the high density lipoprotein particles to create a mixture ~~of~~ comprising the particle derivative, removed lipids, and the lipid removing agent; b. separating the lipid removing agent and the removed lipids from the mixture; and, c. collecting the composition.	Process steps recited in the claim are disclosed on p. 10, line 16, through p. 11, line 21, and in Figure 1.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
116. A composition comprising a particle derivative of at least one form of high density lipoprotein particle comprising lipids and apolipoprotein A-1, wherein the lipids include phospholipids and at least one of triglycerides or fatty acids, wherein the composition is formed by separating low density lipoprotein particles from a biological fluid comprising a mixture of the high density lipoprotein particles and the low density lipoprotein particles and, subsequently to the separation, exposing the biological fluid to a lipid removing agent, wherein the particle derivative has a lower content of at least one of the phospholipids or cholesterol than the high density lipoprotein particles prior to exposure of the biological fluid to the lipid removing agent.	On p. 6, lines 23-28, and on p. 10, line 16, through p. 11, line 21, the specification contains disclosure of a process of delipidation of biological fluids, such as plasma, containing both HDL and LDL particles, wherein the LDL particles are separated from the biological fluid prior to treatment. The delipidation process results in the claimed composition. The process recited in the claim is also schematically illustrated in Figure 1. The term "fluid" is defined on p. 7, line 25, through p. 8, line 4. The term "lipid" is defined as including phospholipids on p. 8, lines 18-24. The term "lipid" is defined as including triglycerides or fatty acids on p. 8, lines 18-24
117. The composition of Claim 116, wherein the particle derivative has a lower content of cholesterol than the high density lipoprotein particles prior to exposure of the biological fluid to the lipid removing agent.	In an example disclosed in Table 1, exposure of HDL particles to a di-isopropyl ether, a lipid removing agent, leads to reduction in HDL cholesterol.
118. The composition of Claim 116, wherein the lipid removing agent is an ether or a combination of an alcohol and an ether.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include ethers and hydrocarbons. (p. 8, line 32). In the working example beginning on p. 16, line 26, a combination of di-isopropyl ether and n-butanol is disclosed (p. 17, line 11).
119. The composition of Claim 118, wherein the ether is di-isopropyl ether.	Di-isopropyl ethers (DIPE) is disclosed as a suitable solvent on p. 8, line 33, on p. 9, line 1; on p. 17 in Table 1 (in particular, the last three rows), and in lines 7 and 10.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
110. The composition of Claim 109, wherein the lipid removing agent comprises a mixture of sevoflurane and n-butanol.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include combinations of ethers and hydrocarbons (p. 8, lines 32-33). Sevoflurane is an ether disclosed on p. 9, line 3.
111. The composition of Claim 103, wherein the separation of the low density lipoprotein particles is performed using an apheresis device.	One of ordinary skill in the art in the field of the present invention would know that an apheresis device is simply a separation device that separates out one particular constituent of blood by any method known to one of ordinary skill in the art, as discussed on p. 10, lines 27-30.
112. The composition of Claim 109, wherein the mixing is performed using a static mixer.	Mixing performed by a static mixer is disclosed on p. 14, lines 22-23.
113. The composition of Claim 109, wherein the separation of the lipid removing agent and the removed lipids is performed using a charcoal column.	Separation step performed using a charcoal column is disclosed on p. 30, lines 29-32.
114. The composition of Claim 103, wherein the biological fluid comprising low density biological particles and high density biological particles is obtained by a process comprising the steps of: a. connecting a patient to a device for withdrawing blood; b. withdrawing the blood containing blood cells from the patient; and, c. separating the blood cells from the blood to yield the biological fluid comprising the high density lipoprotein particles and the low density lipoprotein particles.	Separation of blood cells from plasma prior to delipidation as recited in the claim is disclosed on p. 10, lines 21-24, and in Figure 1. Based on the disclosure, one of ordinary skill in the art of the present invention would understand that blood is withdrawn from the patient prior to separation.
115. The composition of Claim 103, wherein the lipids include at least one of triglycerides or fatty acids.	The term "lipid" is defined as including triglycerides or fatty acids on p. 8, lines 18-24.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
120. The composition of Claim 118, wherein the alcohol is n-butanol.	In the working example beginning on p. 16, line 26, a combination of di-isopropyl ether and n-butanol is disclosed (p. 17, lines 11-13).
121. The composition of Claim 116, wherein the lipid removing agent is a mixture of sevoflurane and n-butanol.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include combinations of ethers and hydrocarbons (p. 8, lines 32-33). Sevoflurane is an ether disclosed on p. 9, line 3.
122. The composition of Claim 116, wherein the exposure is achieved by an exposure process comprising the steps of: a. mixing the lipid removing agent with the biological fluid comprising high density lipoprotein particles to create a mixture comprising the particle derivative, removed lipids, and the lipid removing agent; b. separating the lipid removing agent and the removed lipids from the mixture; and, c. collecting the composition.	Process steps recited in the claim are disclosed on p. 10, line 16, through p. 11, line 21, and in Figure 1.
123. The composition of Claim 122, wherein the lipid removing agent comprises a mixture of sevoflurane and n-butanol.	Suitable lipid removing agents, or "extraction solvents" are listed on p. 8, line 29, through p. 9, line 4, and include combinations of ethers and hydrocarbons (p. 8, lines 32-33). Sevoflurane is an ether disclosed on p. 9, line 3.
124. The composition of Claim 116, wherein the separation of the low density lipoprotein particles is performed using an apheresis device.	One of ordinary skill in the art in the field of the present invention would know that an apheresis device is simply a separation device that separates out one particular constituent of blood by any method known to one of ordinary skill in the art, as discussed on p. 10, lines 27-30.
125. The composition of Claim 122, wherein the mixing is performed using a static mixer.	Mixing performed by a static mixer is disclosed on p. 14, lines 22-23.

Currently Amended Claim	Examples of Support in Provisional Application Serial No. 60/484,690
126. The composition of Claim 122, wherein the separation of the lipid removing agent and the removed lipids is performed using a charcoal column.	Separation step performed using a charcoal column is disclosed on p. 30, lines 29-32.
127. The composition of Claim 116, wherein the biological fluid comprising the mixture of the high density lipoprotein particles and the low density lipoprotein particles–is obtained by a process comprising the steps of: a. connecting a patient to a device for withdrawing blood; b. withdrawing the blood containing blood cells from the patient; and, c. separating the blood cells from the blood to yield the biological fluid comprising the high density lipoprotein particles and the low density lipoprotein particles.	Separation of blood cells from plasma prior to delipidation as recited in the claim is disclosed on p. 10, lines 21-24, and in Figure 1. Based on the disclosure, one of ordinary skill in the art of the present invention would understand that blood is withdrawn from the patient prior to separation.
128. The composition of Claim 116, wherein the particle derivative of the high density lipoprotein particles further comprises at least one of apolipoprotein C-III, apolipoprotein D or apolipoprotein E.	One of ordinary skill in the art in the field of the invention would know that a particle derivative of HDL particle in a composition obtained by the disclosed delipidation process inherently retains similar composition and distribution of apolipoproteins to those found in the HDL particles found in the biological fluids. In particular, the particle derivative comprises apolipoprotein A-1 and at least one of apolipoprotein C-III, apolipoprotein D, or apolipoprotein E.

Applicants assert that Zhu cannot be used to support the rejection of currently pending claims under 35 U.S.C. §102(e) at least because, based on Provisional Application Serial No. 60/484,690, the currently pending claims have the priority date of July 3, 2003. The disclosure of Zhu relevant to the rejection of claims under 35 U.S.C. §102(e) has a later priority date of August 26, 2003. Accordingly, the rejection should be withdrawn for at least this reason.

Zhu Fails to Anticipate the Pending Claims

Applicants also assert that Zhu fails to teach or suggest compositions recited in the currently amended claims. In contrast to the present application and its priority Provisional Application Serial No. 60/484,690, Zhu fails to teach or suggest methods of selective delipidation of biological fluids that would leave LDL particles substantially unmodified, as recited in the currently amended Claims 76-77 and 81-102. Zhu also fails to teach or suggest separating LDL particles from a biological fluid prior to delipidation, as recited in currently amended Claims 103-128. On the other hand, Zhu expressly teaches plasma delipidation methods that modify both HDL and LDL particles contained in the plasma. Moreover, the delipidation methods disclosed in Zhu necessarily result in plasma containing delipidated LDL and delipidated HDL particles. Thus, (1) Zhu contains no disclosure of processes that would result in Applicants' claimed compositions, (2) Zhu expressly teaches plasma delipidation processes that modify both HDL and LDL particles, and the plasma in Zhu contains HDL and LDL particles at the time of delipidation, and (3) the processes disclosed in Zhu inherently result in compositions different from Applicants' claimed compositions. Accordingly, Zhu fails to anticipate the pending claims expressly or inherently, and the rejection of claims under 35 U.S.C. §102(e) should be withdrawn.

Zhu Contains No Disclosure of Processes That Would Result in Claimed Compositions

Zhu fails to disclose a selective delipidation process of a biological fluid that would result in partial delipidation of HDL particles but would leave the LDL particles substantially unmodified. Zhu also fails to teach or suggest separation of HDL and LDL particles prior to delipidation, so that the lipoprotein particle derivatives found in the biological fluid upon delipidation are HDL particle derivatives. Applicants discovered and disclosed, in the present application and in its priority provisional application, novel processes that result in compositions that contain partially delipidated HDL particle derivatives. *See, for example, Specification*, p. 7, lines 29-37; p. 8, lines 1-22; p. 20, lines 11-37; p. 21, lines 1-38; p. 38, lines 25-38, p. 39, lines 1-28; p. 40, lines 6-18; *Figures 1-2*. Unlike the processes disclosed in Zhu, Applicants' novel processes either leave LDL particles substantially unmodified, or include

separation of the LDL particles from the biological fluid prior to delipidation, the biological fluid containing the HDL particles. Accordingly, Zhu contains no disclosure of processes that would result in Applicants' claimed compositions. Provisional Application Serial No. 60/405,922, to which Zhu claims priority, also fails to disclose processes that would result in Applicants' claimed compositions. Accordingly, Zhu fails to expressly teach or suggest making or using Applicants' novel compositions and fails to anticipate the pending claims.

Zhu Expressly Teaches Plasma Delipidation Processes That Modify Both HDL and LDL Particles in Plasma

Zhu expressly teaches plasma delipidation processes that modify both HDL and LDL particles, and the plasma in Zhu contains both HDL and LDL particles at the time of delipidation. In the Summary, Zhu discloses high density (HDL), low density (LDL), and very low density (VLDL) delipidated particles obtained by delipidating plasma. *See* p 1, paragraph 0009. Consistent with the disclosure on p. 1, in the working Example 1 beginning on p. 8, Zhu teaches a delipidation process of pig plasma samples that contain both HDL and LDL. Table 1 on page 9 of Zhu presents pre- and post-delipidation plasma parameters, showing that the process results in delipidation and reduction of cholesterol in both HDL and LDL. See, for example, Table 1, where the last two columns display the data for HDL- and LDL-associated cholesterol before (rows 1-2) and after (rows 3-4) delipidation. Paragraph 0107 in Zhu states that "the delipidation procedure dramatically reduced ... cholesterol associated with HDL, and cholesterol associated with LDL in the plasma samples," and describes the delipidated sample as "containing delipidated HDL and LDL particles."

Example 1 and Table 1 were previously emphasized by the Examiner as the most important basis for the rejection under 35 U.S.C. §102(e). However, in Example 1, Table 1, and elsewhere in the application, Zhu expressly teaches plasma delipidation processes that modify both HDL and LDL particles. Zhu also expressly teaches that the resulting delipidated plasma contains delipidated LDL and delipidated HDL particles. Accordingly, Example 1, Table 1, or any other disclosure in Zhu fail to provide a basis for the rejection under 35 U.S.C. §102(e), and fail to anticipate the pending claims.

The Processes Disclosed in Zhu Inherently Result in Compositions Different from the Claimed Compositions

The processes disclosed in Zhu inherently result in compositions that are different from the claimed compositions. As discussed in the previous section, Zhu teaches plasma delipidation processes that modify both HDL and LDL particles, and the plasma in Zhu contains both HDL and LDL particles at the time of delipidation. In contrast, Applicants' claimed compositions contain partially delipidated HDL particle derivatives, but not substantially delipidated LDL particles. Accordingly, the resulting plasma obtained by any of the processes disclosed in Zhu would necessarily contain delipidated LDL and delipidated HDL particles.

In order for a reference to anticipate inherently, extrinsic evidence must clearly show necessary presence of missing descriptive matter. *See MPEP 2112(IV),* citing *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). As discussed previously, Zhu fails to teach or suggest processes that would result in claimed compositions comprising partially delipidated HDL particle derivatives. Plasma delipidation processes disclosed in Zhu do not and could not inherently result in Applicants' claimed compositions. Accordingly, Zhu clearly fails to supply a description of the delipidation process that would result in Applicant's claimed compositions, and fails to inherently anticipate the claims for at least this reason.

A *prima facie* case of anticipation of a product-by-process claim may be established if the claimed and the prior art products are produced by identical or substantially identical processes. See *MPEP 2112.01(I),* citing *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977). All plasma delipidation processes disclosed in Zhu are different from those disclosed in the present application. Moreover, all the processes disclosed in Zhu necessarily result in compositions that are different from those claimed in the present application. Thus, a *prima facie* case of anticipation may not be established, and Zhu does not and cannot inherently anticipate Applicant's claimed compositions.

In view of the foregoing, Applicants assert that Zhu fails to teach or suggest Applicants' compositions, as claimed, and fails to expressly or inherently anticipate them. Applicants request withdrawal of the rejection of Claims 81-102 under 35 U.S.C. § 102(e).

Double Patenting

The Examiner maintains a provisional rejection of Claims 76 and 77 and raises a provisional rejection of Claims 81-122 under the doctrine of obviousness-type double patenting over Claims 73-78, 80 and 85-90 of a co-pending U.S. Patent Application Serial No. 10/996,570 (hereinafter "'570"). If the provisional rejection of Claims 76-77 and 81-122 applies when allowable subject matter is found, applicants will address this rejection by filing an appropriate terminal disclaimer

CONCLUSION

The foregoing is submitted as a full and complete response to the Final Office Action mailed October 27, 2006. No additional fees are believed due, however, the Commissioner is hereby authorized to charge any deficiencies which may be required or credit any overpayment to Deposit Account Number 11-0855.

Applicants assert that the claims are in condition for allowance and respectfully request that the application be passed to issuance. If the Examiner believes that any informalities remain in the case that may be corrected by Examiner's amendment, or that there are any other issues which can be resolved by a telephone interview, a telephone call to the undersigned agent at (404) 815-6102 or to Dr. John McDonald at (404) 745-2470 is respectfully solicited.

Respectfully submitted,

By: Elena S. Polovnikova, Ph.D.
Patent Agent
Reg. No.: 52,130

KILPATRICK STOCKTON LLP
1100 Peachtree Street, Suite 2800
Atlanta, Georgia 30309-4530
(404) 815-6500
Our Docket: 13131-0331 (44378/293531)